



Europäisches Patentamt
European Patent Office
Office européen des brevets



(11) **EP 0 945 544 A3**

(12) **EUROPEAN PATENT APPLICATION**

(88) Date of publication A3:
22.11.2000 Bulletin 2000/47

(51) Int. Cl.⁷: **D06M 15/21**, D06M 15/263,
D06M 15/285, C09D 151/00,
C08F 257/02, C08F 291/00

(43) Date of publication A2:
29.09.1999 Bulletin 1999/39

(21) Application number: **99104046.0**

(22) Date of filing: **16.03.1999**

(84) Designated Contracting States:
**AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU
MC NL PT SE**
Designated Extension States:
AL LT LV MK RO SI

(30) Priority: **24.03.1998 US 47054**

(71) Applicant:
**National Starch and Chemical Investment
Holding Corporation
Wilmington, Delaware 19803-7663 (US)**

(72) Inventor: **Klein, Rodrigues A.**
Signal Mountain, Tennessee 37377 (US)

(74) Representative:
**Held, Stephan, Dr.rer.nat., Dipl.-Chem. et al
Patentanwälte,
Hagemann, Braun und Held,
Patentanwälte,
Postfach 86 03 29
81630 München (DE)**

(54) **Hydrophilic finish for textiles**

(57) An improved textile material having a hydrophilic finish which is made by a method comprising applying to a fibrous web an aqueous solution comprising an anhydride based graft copolymer, and drying the fibrous web at a temperature sufficient to cure the anhydride based graft copolymer in the fibrous web. The anhydride based graft copolymer is the reaction product of an ethylenically unsaturated monomer, an anhydride monomer selected from maleic anhydride and itaconic anhydride, either a monofunctional polyglycol having a hydroxyl or amine terminal group or a polyfunctional polyglycol having a weight average molecular weight of greater than 5,000 and at least one terminal hydroxyl group, and a free radical initiator. The hydrophilic finish eliminates the shortcomings inherent in certain textile materials such as their high affinity for oils, staining during washing, static cling problems, and wearer discomfort.

EP 0 945 544 A3



European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 99 10 4046

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
X	EP 0 010 582 A (BASF WYANDOTTE CORP) 14 May 1980 (1980-05-14) * page 3, line 19 - page 4, line 14 * * page 5, line 19 - page 6, line 13 * * page 13, line 23 - page 14, line 19 * * page 19, line 2 - line 12 * * page 26, line 21 - line 25 * * examples * * claims *	1-3	D06M15/21 D06M15/263 D06M15/285 C09D151/00 C08F257/02 C08F291/00
E	EP 0 936 226 A (NAT STARCH CHEM INVEST) 18 August 1999 (1999-08-18) * examples * * claims 1,7,8 * * page 6, line 4 - line 15 *	1-9	
A	US 3 544 344 A (YOUNG DAVID W ET AL) 1 December 1970 (1970-12-01) * column 2, line 24 - line 69 * * example 1 *	1-9	
A	US 3 983 271 A (PANGLE JR JAMES C ET AL) 28 September 1976 (1976-09-28) * column 1, line 51 - column 2, line 50 * * examples * * claims *	1-9	TECHNICAL FIELDS SEARCHED (Int.Cl.6) D06M C09D C08F
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 27 September 2000	Examiner Fiocco, M
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

EPO FORM 1503 03.82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 99 10 4046

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

27-09-2000

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP 0010582 A	14-05-1980	CA 1135435 A	09-11-1982
		US 4259457 A	31-03-1981
		US 4263370 A	21-04-1981
		US 4263337 A	21-04-1981
		US 4275176 A	23-06-1981
EP 0936226 A	18-08-1999	AU 1549099 A	02-09-1999
		JP 11315114 A	16-11-1999
US 3544344 A	01-12-1970	NONE	
US 3983271 A	28-09-1976	US 3981836 A	21-09-1976
		US 3630983 A	28-12-1971
		GB 1121664 A	
		DE 1570477 A	25-03-1971